

A
Claim 1 (amended). Apparatus for carrying out mass transfer processes with high-viscosity liquids, comprising at least one vertically disposed vessel having a feed distributor for the liquid to be treated, an outlet for volatile components and an outlet for the treated liquid, the feed distributor having a multiplicity of orifices for subdividing the high-viscosity liquid to be treated into a multiplicity of individual streams, wherein essentially vertically arranged wire loops are disposed in the vicinity of the orifices, along which wire loops the high-viscosity liquid runs off under the action of gravity.

Claim 2 (amended). Apparatus according to Claim 1, wherein the feed distributor is a perforated plate.

Claim 3 (amended). Apparatus according to Claim 1, wherein the feed distributor element comprises at least one horizontally arranged tube which has orifices pointing downwards, upwards or both.

Claim 4 (amended). Apparatus according to Claim 1, wherein the wire loops in the vicinity of the orifices in the feed distributor are disposed detachably.

Claim 5 (amended). Apparatus according to Claim 3, wherein said orifices are slotted orifices pointing upwards.

Claim 6 (amended). Apparatus according to Claim 5, wherein the wire loops are clipped into said orifices.

Claim 7 (amended). Apparatus according to Claim 1, wherein two, three or more of the wire loops at a time are combined into a basket-like lattice or wire mesh.

Claim 8 (amended). Apparatus according to Claim 7, wherein two or more adjacent lattices or wire meshes are linked to one another.

Claim 9 (amended). Apparatus according to Claim 1, wherein the wire loops are attached to the vessel bottom.

Claim 10 (amended). Apparatus according to Claim 1, wherein the wire loops comprising heaters for the wire loops.

Claim 11 (amended). Apparatus according to Claim 1, wherein the feed distributor is formed of heat exchange tubes which are vertically arranged in the vessel, debouch into the vessel and have orifices, the wire loops being attached to the bottom ends of said heat exchange tubes.

Claim 12 (amended). Apparatus according to Claim 1, wherein the area enclosed by each individual wire loop is from 0.5 cm² to 2500 cm².

Claim 13 (amended). Apparatus according to Claim 1, wherein the wire loops taper in the direction of flow of the liquid.

Claim 14 (amended). Apparatus according to Claim 1, wherein the vessel is designed to be heatable, coolable or both.

Claim 15 (amended). Apparatus according to Claim 1, wherein the top ends of individual wire loops are disposed at different orifices.

Claim 16 (amended). Apparatus according to Claim 1, wherein one or more wire lattices essentially arranged horizontally above one another are additionally provided below the orifices.

Claim 17 (amended). A method for boiling down and devolatilizing high-viscosity liquids and for carrying out chemical reactions between liquid layer and a surrounding gas space which contains a reactive gas component, and for condensation reactions which comprises carrying out said boiling down and devolatilizing, or said reactions in an apparatus according to Claim 1.

Please add the following:

--Claim 18. Apparatus according to Claim 10, wherein said heaters are electrical resistance heaters in the wire loops.

Claim 19. Apparatus according to Claim 13, wherein said wire loops form an acute angle at their bottom ends.